

भारतीय मानक  
अवारैम छाल — विशिष्टि  
(पहला पुनरीक्षण)

*Indian Standard*  
**AVARAM BARK — SPECIFICATION**  
( *First Revision* )

ICS 59.140.10

© BIS 2013

**BUREAU OF INDIAN STANDARDS**  
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG  
NEW DELHI 110002

## FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards after the draft finalized by the Leather, Tanning Materials and Allied Products Sectional Committee had been approved by the Chemical Division Council.

*AVARAM*, a shrub (*Cassia auriculata* Linn., fam. Leguminosae) also known as *TARWAD*, *TARWAR*, *AVAL*, *TANGEDU* or *AWAL* is a source of one of the best vegetable tanning materials available indigenously. It occurs in abundance in some parts of the country, particularly in Tamil Nadu, Andhra Pradesh, Maharashtra, Karnataka and Rajasthan. Its bark is extensively used in Tamil Nadu and Maharashtra tanneries for the production of East India tanned leather.

The bark is collected by cutting the shoots or branches of the shrub and stripping by beating the sticks with a stone. The peeled bark is then dried under shade and cut into pieces of about 25 mm in width and 100 to 150 mm in length. The dry bark has a light brown or cinnamon colour.

The infusion of *AVARAM* bark is self-bating and penetrates rapidly, yielding pale-coloured tough and elastic leather. Used alone, the leather may develop a reddish colour when exposed to light and air, but this is prevented when the tanning is completed with myrobalan infusion.

The methods of test are based on the 'Official methods of analysis' published by the Society of Leather Trades' Chemists, U.K. However, to suit Indian conditions the temperature of cooling the infusion before testing has been changed from 18°C to  $27 \pm 2^\circ\text{C}$  as this does not adversely affect the repeatability and reproducibility of the method.

This standard was originally published in 1969. In this revision, the requirement of limitation on pentachlorophenol (PCP) has been introduced, keeping in view of the demand for eco-friendly inputs from the leather industry.

The composition of the Committee responsible for the formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

*Indian Standard*  
**AVARAM BARK — SPECIFICATION**  
*( First Revision )*

**1 SCOPE**

This standard prescribes the requirements and the methods of sampling and test for AVARAM bark intended for tanning.

**2 REFERENCES**

The standards listed below are necessary adjuncts to this standard.

<i>IS No.</i>	<i>Title</i>
1640 : 2007	Glossary of terms relating to hides, skins and leather
5466 : 1969	Method of test for vegetable tanning materials
4905 : 1968	Methods of random sampling

**3 TERMINOLOGY**

For the purpose of this standard, the definitions given in IS 1640, shall apply.

**4 REQUIREMENTS****4.1 Material**

The material is the bark of the species *Cassia auriculata* Linn., fam. Leguminosae, commonly known as AVARAM, cut into pieces and dried.

**4.2** The material shall comply with the requirements given in Table 1, when tested according to the methods mentioned against each of the characteristic.

**5 PACKING AND MARKING****5.1 Packing**

Unless otherwise agreed to between the purchaser and the supplier, the AVARAM bark shall be packed in fairly light-proof packages like gunny bags.

**5.2 Marking**

The containers shall be marked on the outside with the following information:

- a) Name of the material;
- b) Net weight of the material;
- c) Supplier's name and recognized trade-mark, if any; and
- d) Date of packing.

**5.2.1 BIS Certification Marking**

The packages may also be marked with the Standard Mark.

**5.2.1.1** The use of the Standard Mark is governed by the provisions of the *Bureau of Indian Standard Act*, 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of the Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.

**6 SAMPLING**

The scale of sampling and criteria for conformity of the material to the standard shall be as prescribed in Annex A.

**Table 1 Requirements of AVARAM Bark**  
*(Clause 4.2)*

SI No.	Characteristic	Requirement	Method of Test, Ref to Cl of IS 5466
(1)	(2)	(3)	(4)
i)	Tannins, percent by mass <sup>1)</sup> , <i>Min</i>	15	<b>10</b>
ii)	Non-tannins, percent by mass <sup>1)</sup> , <i>Max</i>	12	<b>9</b>
iii)	Moisture, percent by mass, <i>Max</i>	2	<b>6</b>
iv)	pH of analytical strength solution, <i>Min</i>	4.7	<b>12</b>
v)	Colour:		<b>13</b>
	a) Red, <i>Max</i>	5.5	—
	b) Yellow/Red, <i>Min</i>	1.5	—
vi)	PCP content, mg/kg	5	<b>16</b>

<sup>1)</sup> Calculated on moisture-free basis.

## ANNEX A

(Clause 6)

## SAMPLING OF AVARAM BARK

## A-1 SCALE OF SAMPLING

## A-1.1 Lot

In a single consignment all the AVARAM bark of the same form of cutting (such as stick, chopped, ground, etc) ground and dried under similar conditions shall constitute one lot.

**A-1.2** For ascertaining the conformity of the material to the requirements of this standard, each lot shall be considered separately. The number of packages to be selected for this purpose shall depend on the size of the lot and shall be in accordance with Table 2.

Table 2 Number of Packages to be Sampled

Sl No.	No. of Packages in the Lot <i>N</i>	No. of Packages to be Sampled <i>n</i>
(1)	(2)	(3)
i)	Up to 25	3
ii)	26 to 50	4
iii)	51 to 150	5
iv)	151 to 300	6
v)	301 to 500	7
vi)	501 to 1 000	8
vii)	1 001 and above	9

**A-1.3** The packages shall be selected at random from the lot. To ensure randomness of selection, use of random number tables (*see* IS 4905) shall be made. In case random number tables are not available, the following procedure may be adopted:

Starting from any package, count all the packages in the lot as 1, 2, 3, ....., etc, up to  $r$  and so on where  $r$  is the integral part of  $N/n$ ,  $N$  being the number of packages in the lot and  $n$  the number to be sampled. Every  $r$ th container thus counted shall be withdrawn to constitute the sample.

## A-2 PREPARATION OF SAMPLES

**A-2.1** From each of the packages selected according to A-1.2, small portions of the material shall be taken from different parts so as to obtain a most representative sample of the package. The total quantity of the material taken from a package shall be at least three times the quantity needed for carrying out all the tests.

**A-2.2** The material obtained from each package in A-2.1 shall be divided into three equal parts, each forming a test sample representing the package. One set of test samples each representing a selected package, shall be marked for the purchaser, another set for the supplier and the third set kept as a referee sample.

**A-2.3** All the test samples shall be immediately transferred to separate sample containers and shall be sealed air-tight and marked with full particulars necessary for proper identification, such as name of the supplier, place and date of packing, lot number, date of sampling, name of sample, etc.

**A-2.4** The referee sample consisting of a set of test samples shall bear the seal of both the supplier and the purchaser and shall be kept at a place till such time and under conditions as agreed to between the two for use in case of dispute.

## A-3 NUMBER OF TESTS AND CRITERION FOR CONFORMITY

## A-3.1 Number of Tests

Each test sample in the set shall be tested individually for all the requirements of this standard.

## A-3.2 Criteria for Conformity

The lot shall be declared to conform to the requirements of this standard, if each test sample passes all the tests.

**ANNEX B***(Foreword)***COMMITTEE COMPOSITION**

Leather, Tanning Materials and Allied Products Sectional Committee, CHD 17

<i>Organization</i>	<i>Representative(s)</i>
Central Leather Research Institute, Chennai	DIRECTOR ( <b>Chairman</b> )
A. V. Thomas Leather & Allied Products Pvt Ltd, Chennai	SHRI HABIB HUSSAIN SHRI K. MANIVANNAN ( <i>Alternate</i> )
All India Skins & Hide Tanners and Merchants Association, Chennai	SHRI MOHAN M. SREENIVAS SHRI S. MOHAMMED HASSAN ( <i>Alternate</i> )
BASF India Ltd, Mumbai	SHRI P. R. CHAUDHARI DR S. A. NADGOUDA ( <i>Alternate</i> )
Bata India Ltd, Hathidah	DR SUDHIR KUMAR DAS
Central Footwear Training Institute, Agra	SHRI S. N. GANGULY SHRI S. CHAKRABORTY ( <i>Alternate</i> )
Central Leather Research Institute, Chennai	DR C. MURALIDHARAN
Central Pollution Control Board, Delhi	SHRI T. VENUGOPAL SHRI AJAY AGGARWAL ( <i>Alternate</i> )
College of Leather Technology, Kolkata	DR BUDDHADEV CHATTOPADHYAY PROF SWAPAN KUMAR BASU ( <i>Alternate</i> )
Consumer Federation of India, New Delhi	REPRESENTATIVE
Council for Leather Exports, Chennai	SHRI M. M. HASHIM DR ZACKRIA SAIT ( <i>Alternate</i> )
Directorate General of Quality Assurance (DGQA), Kanpur	SHRI G. C. KANNAUJIA SHRI S. CHAKRABORTY ( <i>Alternate</i> )
Footwear Design & Development Institute, Noida	SHRI B. S. KATIYAR SHRI NAVENDU SHEKHAR ( <i>Alternate</i> )
Harman Sales Pvt Ltd, Mumbai	SHRI H. K. RAZDAN SHRI JEEVAN RAZDAN ( <i>Alternate</i> )
Indian Finished Leather Manufacturers & Exporters Association, Chennai	SHRI SHAFEEQUE AHMED SHRI V. P. NAIMMUR RAHMAN ( <i>Alternate I</i> ) SHRI M. SALAHUDDIN BARI ( <i>Alternate II</i> )
Indian Footwear Component Manufacturers Association, Kolkata	SHRI MANI ALMAL
Indian Leather Products Association, Kolkata	REPRESENTATIVE
Indian Leather Technologists Association, Kolkata	SHRI ARNAB JHA DR GAUTAM MUKHERJEE ( <i>Alternate</i> )
Indian Shoe Federation, Chennai	SHRI RAMESH SUBRAMANIAM SHRI ABHIJIT SETH ( <i>Alternate</i> )
Indofil Chemicals Co Ltd, Mumbai	SHRI S. K. JHA
International Institute of Saddlery Technology and Export Management, Kanpur	REPRESENTATIVE
Italab Private Ltd, Chennai	SHRI M. A. ETIAPPAN SHRI J. J. PATEL ( <i>Alternate</i> )
Khadi & Village Industries Commission, Mumbai	SHRI S. VIJAYA KUMAR SHRI R. LAWRENCE ( <i>Alternate</i> )
Kings International Ltd, Kanpur	SHRI TAJ ALAM SHRI G. S. KUMARAN ( <i>Alternate</i> )
Leather Chemicals Manufacturers Association, Mumbai	SHRI VADUVUR T. SRIKANTH SHRI SANJEEV MEHTA ( <i>Alternate</i> )
Liberty Footwear, Karnal	SHRI ADESH GUPTA SHRI S. S. LAHIRI ( <i>Alternate</i> )
Ministry of Commerce, New Delhi	REPRESENTATIVE

## IS 5128 : 2013

<i>Organization</i>	<i>Representative(s)</i>
National Institute of Design, Ahmedabad	SHRI SHEKHAR CHATTERJEE
National Institute of Fashion Technology, New Delhi	SHRI E. SIVASAKTHI
Office of the Development Commissioner, MSME, New Delhi	SHRI S. K. BASU SHRI R. K. KAPOOR ( <i>Alternate</i> )
Planning Commission, New Delhi	DR S. C. LAHIRI
Robinson Sports, New Delhi	SHRI S. S. JOLLY
SGS India Pvt Ltd, Gurgaon	SHRI P. VENKATESAN MS MONIKA SHARMA ( <i>Alternate</i> )
Sports Authority of India Ltd, New Delhi	REPRESENTATIVE
TALTEIA, Chennai	SHRI VADIVELU
Tata International Limited, Dewas	SHRI O. K. KAUL SHRI R. G. BHIRUD ( <i>Alternate</i> )
The Leather Forum Calcutta for Research and Development, Kolkata	SHRI SANJOY DASGUPTA SHRI PRASANTO BHATTACHARJEE ( <i>Alternate</i> )
Vishnu Chemicals, Chennai	DR P. G. PRADHAN SHRI C. P. C. KAMALAKAR RAO ( <i>Alternate</i> )
BIS Directorate General	Scientist 'F' and Head (CHD) [Representing Director General ( <i>Ex-officio</i> )]
 <i>Member Secretary</i> SHRI E. DEVENDAR Scientist 'F' and Head (CHD), BIS	

## Bureau of Indian Standards

BIS is a statutory institution established under the *Bureau of Indian Standards Act*, 1986 to promote harmonious development of the activities of standardization, marking and quality certification of goods and attending to connected matters in the country.

## Copyright

BIS has the copyright of all its publications. No part of these publications may be reproduced in any form without the prior permission in writing of BIS. This does not preclude the free use, in the course of implementing the standard, of necessary details, such as symbols and sizes, type or grade designations. Enquiries relating to copyright be addressed to the Director (Publications), BIS.

## Review of Indian Standards

Amendments are issued to standards as the need arises on the basis of comments. Standards are also reviewed periodically; a standard along with amendments is reaffirmed when such review indicates that no changes are needed; if the review indicates that changes are needed, it is taken up for revision. Users of Indian Standards should ascertain that they are in possession of the latest amendments or edition by referring to the latest issue of 'BIS Catalogue' and 'Standards : Monthly Additions'.

This Indian Standard has been developed from Doc No.: CHD17 (1626).

### Amendments Issued Since Publication

Amend No.	Date of Issue	Text Affected

### BUREAU OF INDIAN STANDARDS

#### Headquarters:

Manak Bhavan, 9 Bahadur Shah Zafar Marg, New Delhi 110002

Telephones : 2323 0131, 2323 3375, 2323 9402

Website: [www.bis.org.in](http://www.bis.org.in)

#### Regional Offices:

#### Telephones

Central	: Manak Bhavan, 9 Bahadur Shah Zafar Marg NEW DELHI 110002	{ 2323 7617 2323 3841
Eastern	: 1/14 C.I.T. Scheme VII M, V. I. P. Road, Kankurgachi KOLKATA 700054	{ 2337 8499, 2337 8561 2337 8626, 2337 9120
Northern	: SCO 335-336, Sector 34-A, CHANDIGARH 160022	{ 260 3843 260 9285
Southern	: C.I.T. Campus, IV Cross Road, CHENNAI 600113	{ 2254 1216, 2254 1442 2254 2519, 2254 2315
Western	: Manakalaya, E9 MIDC, Marol, Andheri (East) MUMBAI 400093	{ 2832 9295, 2832 7858 2832 7891, 2832 7892

**Branches:** AHMEDABAD. BANGALORE. BHOPAL. BHUBANESHWAR. COIMBATORE. DEHRADUN. FARIDABAD. GHAZIABAD. GUWAHATI. HYDERABAD. JAIPUR. KANPUR. LUCKNOW. NAGPUR. PARWANOO. PATNA. PUNE. RAJKOT. THIRUVANANTHAPURAM. VISAKHAPATNAM.